PATENT

IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

Inventor	:	Rui Li
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For	:	METHOD AND APPARATUS FOR MAINTAINING LONGER PERSISTENT CONNECTIONS

Examiner	:	Bharat Barot
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APPELLANT'S REPLY BRIEF

Commissioner for Patents:

This Appellant's Reply Brief is being filed under 37 CFR 41.41 (effective date of September 13, 2004) in response to the Examiner's Answer mailed on October 5, 2010, which in turn was mailed in response to the Appellant's Brief filed on May 7, 2010.

I. Summary of the Examiner's Answer

The Examiner's Answer maintained the rejection of claims 1-5, 9-34, 36, 43-50, and 52 under 35 U.S.C. § 103(a) as allegedly being unpatentable over Craig (U.S. Patent No. 7,031,314) in view of Peiffer (U.S. Patent No. 7,055,028). The Examiner's Answer further maintained the rejection of claims 6-8, 35, and 51 under 35 U.S.C. § 103(a) as allegedly being unpatentable over Craig in view of Peiffer, and further in view of Susai (U.S. Patent No. 6,954,780).

In sections 27-28 subtitled "Response to Argument" (pages 11-16) of the Examiner's Answer, the Examiner presented arguments to support maintaining the rejections of the claims. At least some of these arguments by the Examiner will be addressed below.

It is noted herein for the record that while only some of the Examiner's arguments from the Examiner's Answer are being addressed below, none of the appellant's previous arguments presented in the Appellant's Brief are being waived or withdrawn, by not further raising or otherwise discussing herein such previously submitted appellant's arguments. Furthermore, to the extent that some of the Examiner's arguments in the Examiner's Answer are not specifically addressed herein, such non-addressing of these Examiner's arguments should not be interpreted as a concession by the appellant that the Examiner's arguments have merit--rather, such non-addressing is to avoid redundant resubmission herein of the appellant's arguments that have already been made of record in the present appeal.

II. Discussion of arguments presented in the Examiner's Answer

A. Independent claim 1

Independent claim 1 was addressed in detail in the Examiner's Answer, and is reproduced in part below (emphasis ours):

> "receiving at said network device via said client-side connection ***a communication that signals said server-side connection to close***; and
> ***maintaining persistent***, by said network device, ***at least the server-side connection in response to said communication*** received via said client-side connection."

It was argued in substance in the Appellant's Brief that Craig did not teach at least the recitation of "maintaining persistent…at least the server-side connection in response to said communication [that signals said server-side connection to close]." To support such argument, the Appellant's Brief cited column 17, line 57 to column 18, line 11 of Craig, which is reproduced below (emphasis ours):

> "After the transaction state is complete, the communication session may then enter into an update state (as indicated generally at 440) that

> closes the communication session and a close state (as indicated generally at 450) that closes the connection between the wireless client 110 and the server 180…***During the close state***, however, ***the operating system and networking stack of the service module 190 responds to messages received by the wireless client 110 in order to close the client-side connection***. The operating system and networking stack then notifies the service application that the client-side connection has been closed, and ***the service application responds by initiating closure of the server-side connection***. The operating system and networking stack of the service module 190 then engages in ***conventional closure handshakes*** with the server 180 in order to ***close the server-side connection*** as indicated generally at 455."

Thus, from the above-quoted passage, it is abundantly clear that Craig explicitly teaches that he "close[s] the server-side connection" in response to a communication (*e.g.*, Craig's above-described "conventional closure handshakes" and/or "…responds to messages received by the wireless client 110") that signals the server-side connection to close.

Despite the above explicit teachings of Crag's column 17, line 57 to column 18, line 11 that he ***closes*** his server-side connection, rather than ***maintaining persistent*** as recited in claim 1, the Examiner's Answer still continues to rely on the same passage of Craig in order to support the rejection of claim 1. Specifically, the Examiner's Answer alleged the following in section 28 (page 12):

> "(…column 17 line 66 to column 18 line 11, during the close state the service module responds to communication received by the wireless client in order to close connection that[sic] closing the client-side connection and maintaining the server-side connection until a FIN signal received from the wireless client see reference nos. 450 and 455 of figure 4."

However, it is submitted herein that the above-quoted interpretation of Craig by the Examiner actually supports the appellant's arguments, rather than being a rebuttal against the appellant's arguments. For example, the above-quoted interpretation clearly states that the server-side connection is closed (rather than maintained persistent) in response to "a FIN signal received from the wireless client."

Furthermore, the Examiner is incorrect in interpreting that Craig teaches "maintaining the server-side connection." Instead, Craig teaches from his column 17, line 57 to

column 18, line 11 and Figure 4 (cited by the Examiner) that Craig closes his server-side connection in response to closing his client-side connection. Craig teaches in column 17, line 57 to column 18, line 11 that "the client-side connection has been closed, and the service application ***responds by initiating closure*** of the server-side connection" (emphasis ours), and Figure 4 shows that the server-side connection is closed at 455 after the client-side connection is closed at 450 during the "conventional closure handshakes"--there is no "maintaining persistent…at least the server-side connection in response to said communication [that signals said server-side connection to close]" in Craig.

Section 28 (pages 12-13) of the Examiner's Answer further alleges that certain passages in Pfeiffer's columns 9-10 teach "maintain[ing] persistent connections." It is true that these passages of Pfeiffer discuss maintaining persistent connections—however, such teachings in these passages of Pfeiffer are different than what is recited in claim 1, and such teachings do not support the Examiner's rejection of claim 1.

For example and as previously explained in the Appellant's Brief, column 9, lines 62-63 of Peiffer explicitly teaches that the persistent connection is maintained open "unless ***explicitly commanded*** to ***close***" (emphasis ours). Therefore, Peiffer will also CLOSE (rather than "maintaining persistent" as recited in claim 1) the server-side connection in response to a communication that signals ("explicitly command[s]") the server-side connection to close.

Thus, Peiffer does not cure the deficiencies of Craig with respect to the recitations in claim 1 of "receiving at said network device via said client-side connection a communication that signals said server-side connection to close; and maintaining persistent, by said network device, at least the server-side connection in response to said communication received via said client-side connection." Accordingly, claim 1 should be allowed.

B. Dependent claim 9

Dependent claim 9 recites, *inter alia*, the following (emphasis ours):

> "***wherein maintaining persistent at least the server-side connection*** in response to said communication received via said client-side connection ***includes***:
> ***modifying***, by said network device, ***a header in the communication from a format that signals the server-side connection to***

> ***close to a format that is unrecognizable*** by a server coupled to said server-side connection, to cause the server to ***ignore*** the modified header."

In section 28 (page 14) of the Examiner's Answer, the Examiner alleged that Craig's column 11, line 45 to column 12, line 3 teaches the following (emphasis ours):

> "if the packet ***does not match a classification rule (a format unrecognizable by a server)***, then ***modifying the packet header to replace the original information to terminate the packet and ignore the modified header*** by the server…"

However, the above interpretation of Craig by the Examiner is inaccurate. Craig instead teaches the following in his column 11, line 45 *et seq.* (emphasis ours):

> "If the packet ***does not match a classification rule*** 330, the classifier 325 either drops the packet, ***returns the packet to the IP filter layer 322 without modification***, or redirects the packet to a default service application. ***If the packet matches a classification rule associated with the service application 250, however, the classifier 325 redirects the packet to the service application 250 associated with the classification rule by modifying the packet header to replace the original destination address and destination port with a destination address and destination port associated with the service application 250. The classifier 325 then returns the modified packet to the IP filter layer 322, which forwards the modified packet to the IP and TCP layers 335, 340 for processing***. The classifier 325 also stores the original packet header information (along with the redirected destination address and destination port) within a connection table 332 to enable the classifier 325 and the service application 250 to access the original packet header information at a later time, as will be described hereinbelow."

Assuming *arguendo* and *hypothetically* that the Examiner is correct in that Craig's "does not match a classification rule" is equivalent to "a format that is unrecognizable by a server," then the cited passage of Craig still does not support a rejection of claim 9. Claim 9 recites "modifying…a header…to a format that is unrecognizable by a server" (*e.g.*, modifying→unrecognizable format), whereas the above-quoted passage of Craig is opposite or otherwise different from the recitations of claim 9. As taught by Craig above, he first does not

"recognize" the packet and then proceeds "without modification" (*e.g.*, unrecognizable→no modifying).

Furthermore, in the event that Craig recognizes the packet (if the packet matches a classification rule), then the above-quoted passage of Craig indisputably teaches that he performs a modification of the packet to a format that is ***recognizable*** by a server ("forwards the modified packet to the IP and TCP layers 335, 340 for processing"). Thus in this situation, Craig performs a process that involves recognizing→modifying→recognizable format, rather than modifying→unrecognizable format as represented in claim 9.

Accordingly, since Craig singly or in combination with the other references does not teach the recitations of claim 9, claim 9 is allowable.

C. Dependent claim 11

Dependent claim 11 recites, *inter alia*, the following (emphasis ours):

> "***wherein maintaining persistent at least the server-side connection*** in response to said communication received via said client-side connection ***includes***:
> ***changing***, by said network device, ***a HTTP version value indicated in the communication to another HTTP version value*** that is recognizable by a server, coupled to said server-side connection, as being ***associated with a persistent connection***."

In section 28 (page 15) of the Examiner's Answer, the Examiner alleges that column 9, lines 20-48 of Pfeiffer teaches the recitations of claim 11. Specifically, the Examiner alleges that Pfeiffer teaches "determining the type of the request and use that information to match proper version of HTTP request with server-side socket, which is functionally equivalent to the claimed limitations and implies that changing a HTTP version value that is recognizable by a server."

The Examiner's reliance on Pfeiffer to support the rejection of claim 11 is without merit.

The cited passage of Pfeiffer merely describes "determining the type of the request" and mentions nothing regarding "changing a HTTP version value indicated in the

communication…" as recited in claim 11. Stated in another way, "determining" a HTTP version value is not the same as, not functionally equivalent to, or does not imply "changing" the HTTP version value. Indeed, Pfeiffer explains in the cited passage that he designates separate sockets for HTTP 1.0 requests and for HTTP 1.1 requests, and then routes requests to the appropriate socket depending on the request's determined HTTP-type. Clearly therefore, Pfeiffer is not changing the HTTP version value of the request--he is just sending the request (without any "changing") to the appropriate socket that is designated to handle that type of request.

Hence, since Pfeiffer singly or in combination do not teach the recitations of claim 11, claim 11 is allowable.

D. Other claims

The other claims are allowable by virtue of the reasons set forth in the Appellant's Brief and also by virtue of reasons analogous to those presented above.

In view of the arguments as set forth above and in the Appellant's Brief, the Examiner's rejections should be withdrawn.

Respectfully submitted,
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